TiCu Clad®-Titanium Bonded Copper Rod and Bar
(Dimensionally Stable Anode)

UDO PLANTE GmbH

Corrosion resistant – metallurgical bonded – titanium clad copper rods to convey current into diaphragma cells for chlorine electrolysis or other industrial application.

1. Materials and Standards

Coating:	Titanium Material no. 3.7025 or 3.7035 DIN 17850 ASTM B 265 Grade 1 or 2
Core:	SE-Cu Material no. 2.0070 DIN 1787 ANSI/ASTM B 224 UNS no. C 10300

2. Performance and Condition

Metallurgical bonded bar/rod, hot co-extruded

Surface condition:	a) co-extruded b) co-extruded and cold formed c) co-extruded, cold formed and annealed d) others on request

3. Dimensions

Outside diameter:	12.7 mm – 70 mm
Cladding:	0.3 mm - 4 mm depending on diameter
Length:	up to 6 m
Tolerances:	acc. to specification

Other dimensions like squares and hexagonals as well as bigger lengths on request.

3.1 Special Sections on Request

4. Chemical Composition (%)

4.1 Ti-Cladding (ASTM B 265)

	Titanium Grade 1	Titanium Grade 2
N_2	≤ 0.03	≤ 0.03
O_2	≤ 0.18	≤ 0.25
H_2	≤ 0.015	≤ 0.015
C	≤ 0.10	≤ 0.10
Fe	≤ 0.20	≤ 0.30
Residuals (total)	≤ 0.4	≤ 0.4
Ti	remainder	remainder

4.2 Copper Core

Cu	≥ 99.90
P	appr. 0.003

5. Electrical Conductivity

SE-Cu	≥ 99 % IACS [57.5 m/(Ω·mm²)]

6. Shearing strength

τ_t	≥ 100 N/mm²

7. Tests

7.1 Nondestructive Testing of Bond Integrity

By ultrasonic testing (regular)

7.2 Dimensional Testing

Outer dimension and clad thickness (regular)

7.3 Electrical Conductivity of the Copper Core (regular)

7.4 Electrical Potential Difference between Ti-Coating and Copper Core

(on request)

7.5 Shearing Test

Determination of shearing strength by shearing test (on request)

8. Application

Ti-clad copper rod of high electrical conductivity is used to convey current into chlorine electrolysis plants, electroplating plants and cathodic protection against corrosion. Thanks to the production process chosen, there is no need to fear a loss of current caused by unsatisfactory adhesion of titanium to the copper. The titanium coating performs an excellent protection against corrosion attack in the brine feed.

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